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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/032,936

12/27/2001

Tadao Mandai

10417-112001

8001

26211

7590

06/08/2004

FISH & RICHARDSON P.C.

45 ROCKEFELLER PLAZA, SUITE 2800

NEW YORK, NY 10111

EXAMINER

BLOUNT, ERIC

ART UNIT

PAPER NUMBER

2636

DATE MAILED: 06/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/032,936

Applicant(s)

MANDAI ET AL.

Examiner

Eric M. Blount

Art Unit

2636

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-9 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date paper #3 5/28/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. **Claims 4 and 7-9** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The terms "CTL" in claim 4 and "CONT" in claims 7-9 are relative terms which render the claims indefinite. The terms "CTL" and "CONT" are not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Please amend the claims by providing the word or words for the acronyms. Once the terms are defined, applicant may use the terms as necessary. For example, if applicant were defining MOS, applicant would define it as: metal-oxide semiconductor (MOS). MOS could be used in the following claims as needed.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Buchas [U.S. Patent No. 4395665].

As for **claim 1**, Buchas teaches a vibrator controlling circuit that comprises a square wave generating circuit for generating a square wave signal whose frequency changes according to the value of a voltage applied to a controlling terminal (Figure 1 and column 2, lines 20-33 and column 3, lines 45-57). Buchas shows a square wave generating section that supplies a signal to a phase locked loop. An error signal is calculated and supplied to a voltage-controlled oscillator (VCO); the VCO changes the frequency of square wave in accordance with the error signal. Though a controlling terminal is not specifically taught one of ordinary skill in the art would recognize that if a VCO were used, as taught by Buchas, the input would inherently be considered a control terminal. Buchas also discloses a switching element, which is turned on/off on the basis of the square wave signal to supply a driving current to a vibrator (column 4, lines 54-68 and column 5, lines 1-27). Disclosed is a frequency shift detecting section for detecting a frequency shift between the square wave signal from the square wave generating section and a resonance frequency of the vibrator (column 2, lines 24-26). The phase locked loop acts as a frequency shift detecting circuit. A shift in the frequency generated by the square wave generating section is trimmed by a signal detected by the frequency shift detecting section (column 2, lines 26-33). The error signal is applied to trim the generated square wave signal.

Regarding **claim 3**, Buchas discloses that a square wave signal generated by the square wave generating section is divided by a half-divider and the divided signal is

applied to the switching element (Figure 1 and column 3, lines 60-68 and column 4, lines 1-10).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Buchas as applied to claim 1 above, and further in view of Strohbeck et al [U.S. Patent No. 6650232].

As for **claim 2**, Buchas teaches that the switching element may take the form of transistors (column 4, lines 57-68). Buchas does not specifically teach that the switching element is a MOS transistor.

In an analogous art, Strohbeck et al teach that MOS type transistors can be used in a vibrator control circuit for driving current to a vibrator (column 2, lines 29-53). It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to use the most efficient type of transistor for controlling the driving current to a vibrator. Strohbeck et al show that MOS type transistors would work in this type of system. Obviously, this type of transistor could have been used in the invention of Buchas, as it provides the necessary functionality. Further, choosing this type of

transistor would be a design choice that depended upon the characteristics of the transistors.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Buchas as applied to claim 1 above, and further in view of Narea et al [U.S. Patent No. 5936516].

As for **claim 6**, the Office would like to note that the use of microchips and integrated circuits was well known in the art at the time of the invention by the applicant. Size constraints would have made the use of a single chip an obvious design choice. Nevertheless, Buchas does not specifically disclose a use of a single chip for components of the vibrator controlling circuit.

In an analogous art, Narea et al disclose that circuit components may be included in a single chip (column 2, lines 32-41). It would have been obvious to one of ordinary skill in the art to combine the teachings of Narea et al with the teachings of Buchas because the combination would result in a circuit that may be smaller in size, less weighty, and less expensive while providing better reliability.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Buchas as applied to claim 1 above, and further in view of Gutman et al [U.S. Patent No. 5436622].

As for **claim 7**, Gutman et al disclose a CONT terminal, when a CONT signal turns on the vibrator control circuitry when the CONT signal changes from a first level to

a second level upon detection of a ringing signal (column 4, lines 38-65). The receiver in Gutman et al can be considered a CONT terminal. When a ringing signal is detected, it sends a signal to the vibrator control section (which is the square wave generating section in Buchas). Changing from a first level to a second level is analogous to changing from an off state to an on state.

It would have been obvious to one of ordinary skill in the art to combine the teachings of the aforementioned inventors because a combination would result in a vibrator control circuit that could be used in embodiments wherein a remote source could control the operation of the circuitry, such as a pager or cellular phone.

Allowable Subject Matter

9. **Claim 5** is objected to as being dependent upon a rejected base claim, but it appears that it would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. It appears that **claims 4, 8, and 9** would be allowable over the prior art if the 35 U.S.C. 112 rejection is overcome and the claims are rewritten in independent form including all of the limitations of the base claim and any intervening claims.


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Myers, Edgren et al, and Hiroyoshi et al teach vibratory control circuits that were pertinent to the examination of this application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric M. Blount whose telephone number is 703-305-5042. The examiner can normally be reached on 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Hofsass can be reached on 703-305-4717. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eric M. Blount
Examiner
Art Unit 2636


JEFFERY HOFSSASS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600